ABSTRACT OF THE DISCLOSURE

A single electron memory device including quantum dots between a gate electrode and a single electron storage element and a method for manufacturing the same, wherein the single electron memory device includes a substrate on which a nano-scale channel region is formed between a source and a drain, and a gate lamination pattern including quantum dots on the channel region. The gate lamination pattern includes a lower layer formed on the channel region, a single electron storage medium storing a single electron tunneling through the lower layer formed on the lower layer, an upper layer including quantum dots formed on the single electron storage medium, and a gate electrode formed on the upper layer to be in contact with the quantum dots.